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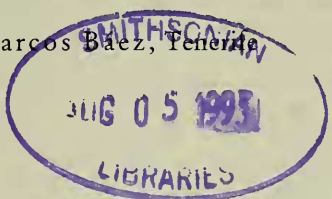
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On some Psychodidae (Diptera) from Madeira

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With 11 figures



Summary

Two new species of Psychodidae (Diptera), *Mormia maderensis* spec. nov. and *Pericoma improvisa* spec. nov. from Madeira are described. Both are close relatives of species distributed either in North Africa or in Europe. All together eleven taxa of Psychodidae are known at present from that group of islands.

Zusammenfassung

Zwei neue Psychodidae (Diptera), *Mormia maderensis* spec. nov. und *Pericoma improvisa* spec. nov. werden von Madeira beschrieben. Beide sind nahe mit Taxa verwandt, die in Nord-Afrika oder Europa verbreitet sind. Insgesamt sind nun elf Psychodiden-Arten von dieser Inselgruppe gemeldet.

1. Introduction

Until recently only the following five Psychodidae (Diptera) were known from Madeira: *Tinearia alternata* (Say), *Trichopsychoda brincki* Nielsen, *Trichopsychoda maderensis* (Satchell), *Paramormia cornuta* (Nielsen), *Clogmia albipunctata* (Williston), all mentioned or described by FREY (1949), NIELSEN (1964), SARÀ (1965) and VAILLANT (1954, 1958). Since that time no further information on moth-flies of that group of islands became available. During two visits there, the junior author collected several interesting species of that family that are recorded and described below.

2. Material and methods

Specimens were preserved in ethanol. For species distinction a 50x magnification is sufficient. However, for species description slides of single specimens must be prepared. The procedure is as follows: 1. Wings are dissected and put immediately into clove oil. 2. The entire body is cleared in hot KOH (10%), until it becomes translucent. 3. It is then put into acetic acid (96%) for a few minutes and then into a mixture (1:1) of acetic acid and clove oil, and after 1-2 hrs into pure clove oil. Head, wings, thorax and abdomen finally are arranged on a single slide under separate cover slips. An inspection at higher magnification is thus possible. Drawings were made with a LEITZ Dialux 20 EB, with a drawing mirror attached.

The specimens denoted with a * remain in the collection of the senior author (WAGC) in the Limnologische Flußstation Schlitz, Germany, all other material is located in the collection of the Zoological Department of the University of La Laguna, Tenerife.

3. Species recorded

- Clogmia albipunctata* (Williston): Madeira, 4 ♀♀, Funchal, 7. VIII. 1989; 4 ♀♀, Monte, 17. VIII. 1989; 3 ♀♀, Cabo Girao, 26. VIII. 1989; 2 ♂♂, 13 ♀♀, Faja, 22. VIII. 1989. — Porto Santo: 1 ♀, Vila Baleira, 24. VIII. 1989.
- Tinearia alternata* (Say): Madeira, 1 ♀, Funchal, 7. VIII. 1989; 1 ♀, Monte, 17. VIII. 1989; 1 ♂, 7 ♀♀, Pico Arreiro, 9. VII. 1990; 3 ♂♂, 1 ♀, Cabo Girao, 26. VIII. 1989.
- Psychoda cinerea* Banks: Madeira, 1 ♀, Monte, 17. VIII. 1989.
- Psychoda minuta* Tonnoir: Madeira, 1 ♂, Monte, 17. VIII. 1989.
- Psychoda severini* Tonnoir: Madeira, 1 ♂, 3 ♀♀, Ribeira Frio, 12. VII. 1990; 2 ♀♀, Chao dos Louros, 13. VII. 1990.
- Mormia maderensis* spec. nov.: Madeira: 2 ♂♂, Ribeira Frio, 12. VII. 1990.
- Paramormia ustulata* (Walker): Madeira, 1 ♂, 1 ♀, Ponta do Sol, 18. VIII. 1989; 1 ♂, Faja, 22. VIII. 1989. — Porto Santo, 8 ♂♂, Vila Baleira, 24. VIII. 1989.
- Paramormia cornuta* (Nielsen): Madeira, 2 ♂♂, Cabo Girao, 26. VIII. 1989; 2 ♂♂, 2 ♀♀, Faja, 22. VIII. 1989; 1 ♂, Encumeada, 11. VII. 1990 (*).
- Paramormia* spec.: Madeira, 1 ♀, Campanario, 15. VIII. 1989; 1 ♀, Faja, 22. VIII. 1989.
- Nielseniella maderensis* Satchell: Madeira, 2 ♀♀, Monte, 17. VIII. 1989; 4 ♂♂, 1 ♀, Ribeira Frio, 27. VIII. 1989; 9 ♂♂, 2 ♀♀, Encumeada, 20. VIII. 1989; 2 ♂♂, 4 ♀♀, Faja, 22. VIII. 1989; 4 ♂♂, 2 ♀♀, Rabacal, 10. VII. 1990; 11 ♂♂, 8 ♀♀, Encumeada, 11. VII. 1990 (1 ♂, *); 17 ♂♂, 9 ♀♀, Ribeira Frio, 12. VII. 1990 (1 ♂, *).
- Clytocerus wollastoni* Satchell: Madeira, 1 ♂, 3 ♀♀, Ponta do Sol, 18. VIII. 1989; 3 ♂♂, 3 ♀♀, Camacha, Levada da Serra, 20. VIII. 1989; 2 ♂♂, 2 ♀♀, Campanario, 15. VIII. 1989; 1 ♀, Monte, 17. VIII. 1989; 1 ♂, 1 ♀, Rabacal, 10. VII. 1990; 1 ♀, Encumeada, 11. VII. 1990; 7 ♂♂, 6 ♀♀, Ribeira Frio, 12. VII. 1990 (1 ♂, *).
- Pericoma improvisa* spec. nov.: Madeira: 1 ♂, Cabo Girao, 26. VIII. 1989; 1 ♀, Campanario, 5. VIII. 1989.

4. Descriptions of new species

4.1. *Pericoma improvisa* spec. nov. (Figs. 1–5)

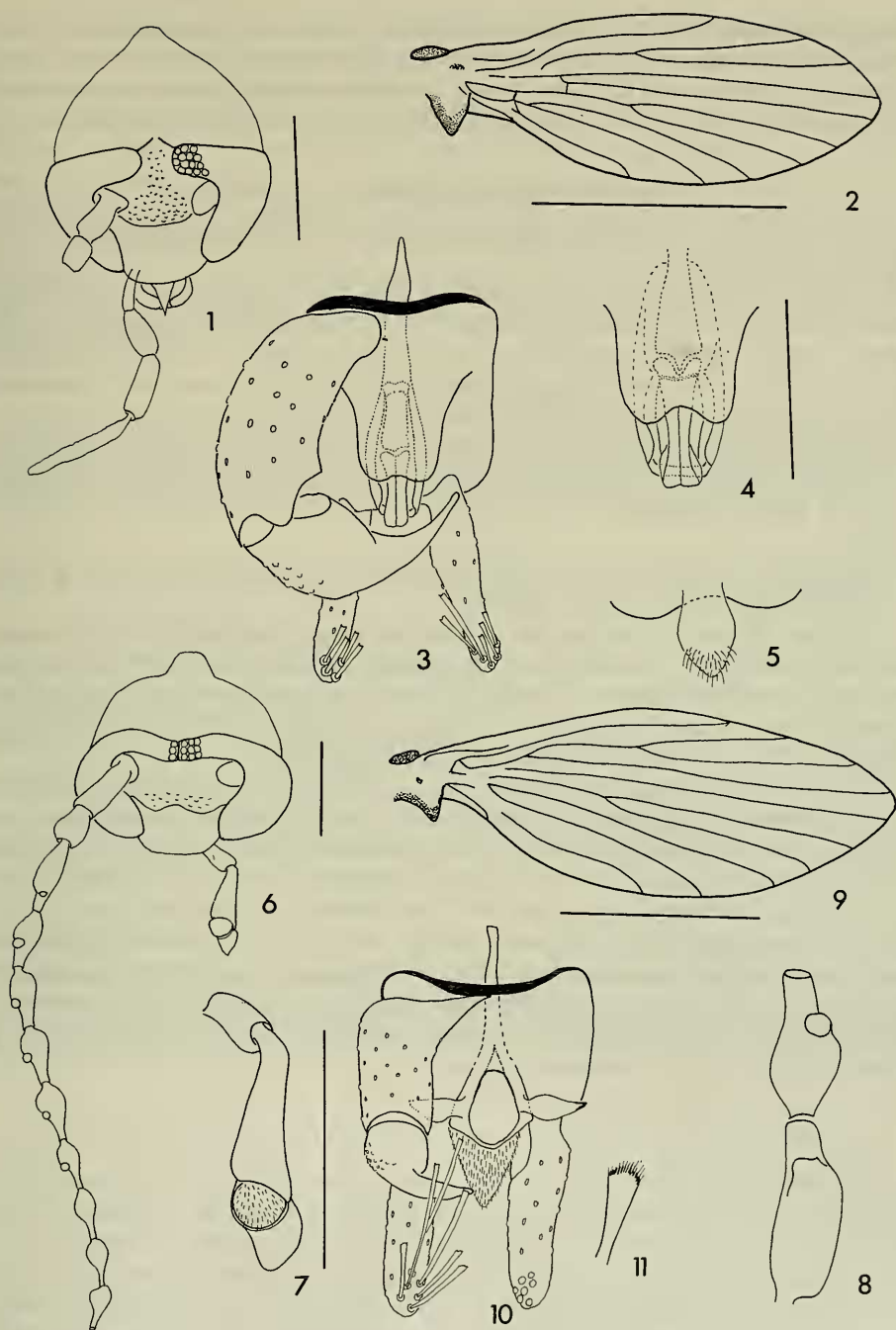
Material: Holotype: 1 ♂, Madeira; Cabo Girao, 26. VIII. 1989, leg. BÁEZ.

Description: Head of typical generic shape. Eyes separated by a distance of 3.5 facet diameters, eye bridge consists of 4 rows of facets. Antenna with all flagellomeres missing. Scape cylindrical, twice as long as wide, pedicel spherical. Palpus segments 2 and 3 remarkably broad, distal segment annulate. Relative length of palpus segments: 10-11-14-25.

Wing of normal size and shape, wing length 1.9 mm. Thorax and legs without further specific features.

Genitalia: Basistyles cylindrical, slightly bent, twice as long as wide. Dististyles basally as wide as the basistyles, distally with a slightly curved tip. Ventral band comparatively thin. IXth tergite quadrate. Subgenital plate conical, covered with comparatively long hairs. Cercopodia elongate, slightly bent, distally with 4–5 tenacula. Aedeagus similar to that of other species of the *Pericoma diversa*-group, with an elongate and sclerotized phallus sheath. The inner paired sclerites of the closing mechanism are comparatively short and stout. However, they are longer than the dorsal plate, the distal end of which is angular, thus the aedeagus tip appears blunt.

Relations: Concerning the genitalia *Pericoma improvisa* spec. nov. is a member of the *Pericoma diversa*-group. Other taxa of that group are *P. diversa* Tonnoir (W-Eu-



Figs. 1-5. *Pericoma improvisa* spec. nov. - 1. Head; - 2. wing; - 3. genitalia, ventral view; - 4. aedeagus; - 5. end of IXth tergite with subgenital plate.

Figs. 6-11. *Mormia maderensis* spec. nov. - 6. Head; - 7. palpus; - 8. antennal segments 3-4; - 9. wing; - 10. genitalia, ventral view; - 11. tip of a tenaculum. - Scale: 1.0 mm (2, 9), 0.1 mm (1, 3-8, 10-11).

rope), *P. granadica* Vaillant (Iberian Peninsula), *P. alticola* Vaillant (Alps at elevations above 1500 m), and *P. tatrca* Szabó (Tatra Mountains). The proportions of the styles, the short hull and the blunt tip of the aedeagus distinguish the new species from its closest relatives, which are all distributed on the European continent.

4.2. *Mormia maderensis* spec. nov. (Figs. 6–11)

Material: Holotype: 1 ♂, Madeira, Ribeira Frio, 10. VII. 1990, leg. BÁEZ; paratype: 1 ♂ together with holotype (*).

Description: Head with a small postocular area. Eyes contiguous over a distance of 3 facet diameters. Eye bridge consists of 3 rows of facets. Palpus 4-segmented, segments 3 and 4 strongly reduced in size. Relative length of palpus segments: 20-35-10-12. Third segment spherical, inserted laterally at the inner side of segment 2, distal segment short conical with a blunt tip, not annulate, as in many other species. Antenna: Scape elongate and cylindrical, pedicel shorter, flagellar segments bottle-shaped. Antennal segments 3–8 with a circular opening (bull eye). Relative length of antennal segments: 33-22-40-30-30-30-29-28-28-23, distal segments missing.

Wing infuscated length 2.3 mm. Wing venation not different from other species. Thorax and legs without specific features.

Genitalia: IXth tergite rectangular, wider than long. Basistyles cylindrical, inner tips close to each other. Dististyles basally spherical, turned dorsally with a short tip. Cercopodia straight bearing 6–7 tenacula with frazzeled tips. Aedeagus racket-shaped, similar to that of related species. In both type specimens it is in its most distal position, so that the ventral triangular plates point laterad.

Relations: *Mormia maderensis* spec. nov. is a member of the subgenus *Palpomormia* Salamanna & Raggio. All species have a simple pedicel without an inner prolongation, and flagellar segments 3–8 with „bull eye organs“ (circular openings). Members of that subgenus are: *M. bryophila* Vaillant (W-Alps), *M. palposa* (Tonnoir) (England, Belgium), *M. josanicana* Krek (Balkan), *M. satchelli* (Jung) (Germany), *M. tenebrosa* (Satchell) (Canary Islands). Whether *M. lanceolata* (Tokunaga) from Japan really is a close relative of the European species remains speculative. However, from all the Westpalearctic species mentioned above, the new species is distinguished by its remarkable short palpus segments and by the possession of a bull-eye organ in the 3rd antennal segment.

5. Zoogeographical relations of the psychodid fauna of Madeira

Compared with the Psychodidae of the Canary Islands (14 species, WAGNER 1988) only eleven taxa are known from Madeira at present. But with the exception of species with cosmopolitan or circumtropical distribution (all species of *Tinearia*, *Psychoda*, *Clogmia* and *Paramormia ustulata*) there are several having close relations to only continental European taxa (*Mormia maderensis* spec. nov., *Clytocerus wollastoni* Satchell, *Pericoma improvisa* spec. nov. and *Nielseniella maderensis* Satchell). Close faunistic relations to the Canary Islands or to North Africa have not yet been found. Probably the genus *Nielseniella* Vaillant should be considered a subgenus or even synonym of *Threticus* Eaton. However, the existence of 3 species of that genus in Madeira is highly improbable, because 2 of them have been described only on females. The larger series of material of *Nielseniella* shows its close affinities to *Thre-*

ticus. The main difference between both is the presence of only a single tenaculum in *Nielsenella*. It can be supposed, that in *Threticus* the number of tenacula is variable (and this assumption is based on further Afrotropical material), so that the synonymy of both is highly probable. The only biogeographical links between Madeira and the Canary Islands are *Mormia tenebrosa* Satchell and *M. maderensis* spec. nov. *Paramormia cornuta* (Nielsen) is not the only species of that genus on Madeira as was assumed by previous authors. *P. ustulata* (Walker) probably has been introduced during the period of increasing traffic and tourism, its larvae or eggs may be distributed in any kind of decaying organic matter and the larvae may survive under a great variety of ecological circumstances. However, *Paramormia cornuta* is an endemic of Madeira.

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